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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,071	03/24/2004	Syouichi Fukutoku	1117.70170	7097
<div>7590      01/22/2007 Patrick G. Burns, Esq. GREER, BURNS &amp; CRAIN, LTD. Suite 2500 300 South Wacker Dr. Chicago, IL 60606</div>			<div>EXAMINER CHOW, YUK</div>	
			<div>ART UNIT 2112</div>	<div>PAPER NUMBER</div>
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/22/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/808,071	<b>Applicant(s)</b> FUKUTOKU, SYOICHI	
	<b>Examiner</b> Yuk C. Chow	<b>Art Unit</b> 2112	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Mar. 24 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>Mar. 24 2004; Apr. 23 2004</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Objection to the Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The “first power supply” and “second power supply” of claims 1-16 lacks antecedent basis in the specification. Correction of the following is required.
2. Background of the invention and the drawing indicate that figure 5 is a “prior art”. Summary of the invention states as the present invention. Therefore, it is not clear whether figure 5 is a “prior art” or the present invention. Correction is required.

### ***Objection to the Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “first power supply” and “second power supply” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the

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brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 1-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matters "first power supply" and "second power supply" which were not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification discloses an "internal power supply" (Fig. 3 (7)). However, the specification has failed to teach on skill in the art how to make or use the "first and second power supplies".

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1-11, 13, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kanbe et al. (US Patent 6,151,016).

For claim 1, Kanbe teaches:

A liquid crystal display device (see abstract), being configured such that at least one internal power supply (Fig 13(59)) is automatically changed (see abstract which describes a system switches to auxiliary power supply upon input of a power source OFF signal) from a first power supply (see Fig. 1 (14)) to a second power supply (see Fig. 1(10)) different from the first power supply when an input power supply (Fig 13 (71)) fed to the liquid crystal display device is cut off (Fig 13 (60)).

For claim 2, Kanbe teaches:

The liquid crystal display device according to claim 1, wherein a voltage (Fig. 14 (constant voltage output) of said first power supply (Fig. 1 (14)) changes with time (Fig. 16 (source/gate enable signal), and wherein a voltage of said second power supply (Fig. 1 (10)) is attenuated (Col. 13 line 37, auxiliary power source using a capacitor, voltage in capacitor attenuates over time) according to a power outputted as the internal power supply (Fig 13(59), see Col. 8 line 24-31).

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For claim 3, Kanbe teaches:

The liquid crystal display device according to claim 1, wherein a voltage of said first power supply lowers every constant period (Fig. 3, Main Power Source ON Period) and thereafter, returns to an original voltage (Fig 3, Vertical Period ON Level), and wherein a voltage of said second power supply (Fig. 3 Auxiliary Power Source) is kept substantially constant (Fig. 14, Relay Switch Control Signal).

For claim 4, Kanbe teaches:

The liquid crystal display device according to claim 1, comprising a power holding circuit (see Col. 13 line 34-37 "a capacitor") configured to hold a power fed by the input power supply (Fig 13 (71)), and wherein said second power supply (Fig. 1(10)) uses the power held in said power holding circuit.

For claim 5, Kanbe teaches:

The liquid crystal display device according to claim 4, wherein as said second power supply, residual charges (see Col. 8 line 27-31) in said power holding circuit (Fig. 13 (59)) are utilized.

For claim 6, Kanbe teaches:

The liquid crystal display device according to claim 1, wherein said internal power supply is a gate-on power supply (Fig 1 (3)) involved in driving control of a gate signal line (Fig. 2(25<sub>1,2...m</sub>)) of a display part.

For claim 7, Kanbe teaches:

The liquid crystal display device according to claim 1, wherein, after the input power supply (Fig 13 (71)) is cut off, a voltage based on said second power

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supply is outputted to all gate signal lines of a display part (see Col 6 line 66-Col.7 line 24, also Col 8 line 1-9).

For claim 8, Kanbe teaches:

A liquid crystal display device, comprising: a first power supply (Fig. 1 (14)) circuit configured to generate a first power supply from an input power supply (Fig 13 (71)) fed to the liquid crystal display device; a second power supply circuit (Fig. 1 (10)) configured to generate from the input power supply a second power supply different from the first power supply; and a power supply changeover circuit (Fig. 13 (56)) configured to selectively output, as an internal power supply (Fig 13(59)), one of the first power supply generated in said first power supply circuit and the second power supply generated in said second power supply circuit.

For claim 9, Kanbe teaches:

The liquid crystal display device according to claim 8, wherein said power supply changeover circuit (Fig. 13 (56)) automatically changes (see abstract which describes a system switches to auxiliary power supply upon input of a power source OFF signal) the power supply to be outputted as the internal power supply (Fig 13(59)) from the first power supply to the second power supply when the input power supply is cut off (Fig 13 (60)).

For claim 10, Kanbe teaches:

The liquid crystal display device according to claim 8, wherein said power supply changeover circuit (Fig 13 (56)) changes the power supply to be outputted

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as the internal power supply (see Abstract) according to a voltage of the input power supply (Fig 13(71)).

For claim 11, Kanbe teaches:

The liquid crystal display device according to claim 8, wherein the internal power supply (Fig 13(59)) is a power supply for driving a gate signal line (Fig. 2(25<sub>1,2...m</sub>)) of a display part (see Col 6 line 66 – Col.7 line 24).

For claim 13, Kanbe teaches:

The liquid crystal display device according to claim 8, wherein said first power supply (Fig 1(14)) circuit generates the first power supply whose voltage (Fig 16, Source/Gate Enable Signal) is changed based on an inputted oscillation signal (Fig. 16, Horizontal Synchronizing Signal), and wherein said second power supply circuit (Fig 1(10)) holds a power by the input power supply (Fig 13(71)) to generate the second power supply (Fig 1(10)).

For claim 14, Kanbe teaches:

The liquid crystal display device according to claim 8, further comprising a gate driving circuit (Fig.13(53)) configured to be fed with the internal power supply (Fig 13(59)) to drive a gate signal line (Fig 2(25<sub>1,2...m</sub>)) of a display part, wherein said gate driving circuit (Fig.13(53)) sequentially outputs signals generated using the first power supply (Fig 1 (14)) to the gate signal lines, and when the input power supply (Fig 13(71)) is cut off, said gate driving circuit outputs a voltage (Fig 15, Gate Driving Signal) of the second power supply (Fig 1(10)) to all the gate signal lines.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe in view of Lee (US Patent 7,023,511).

As to Claim 15 and 16, Kanbe teaches the limitation of claim 1 for the reason above.

However, Kanbe differs from the claimed invention in that the LCD is not taught to necessarily be a “transflective liquid crystal display device”.

Lee teaches a transsfective liquid crystal display that can be operated as transmissive mode or reflective mode or both at the same time (Col. 4 line 53 – Col. 5 line 11). Lee also indicates the reflective or transflective LCD having a good utilizing efficiency in power usage (Col. 2 line 64-67), that is an advantage over the conventional LCD device of Kanbe.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to use reflective or transflective LCD of Lee’s with the LCD device of Kanbe, because they both provide greater efficiency in power usage.

10. Claim 12,17,18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe in view of Nemoto et al. (US Patent 4,779,956).

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As to claim 12, Kanbe teaches the limitation of claim 8, 11 for the reason above.

However, Kanbe differs from the claimed invention in that a voltage waveform is not necessarily for "reducing luminance unevenness".

Nemoto teaches an improved driving circuit for a LCD without inclination of luminance from upper part to the lower part (Col. 4 line 20-25), which means reducing luminance unevenness. And wherein has a gate voltage generating apparatus for generating a gate voltage across both terminals of the liquid crystal cell (Col. 7 line 5-11). Therefore the inclination of luminance of the display can be eliminated.

It would have been obvious to one of ordinary skill in the art at the time of invention was made to utilize a driving circuit that will reduce luminance unevenness as taught by Nemoto into an afterimage erasing device of Kanbe, because this not only improves image quality while LCD is in display mode, and also prevents deterioration of liquid crystal cells caused by the luminance unevenness.

As to claims 17 and 18, Kanbe teaches erasing device erases afterimage on conventional LCD utilizing a driving signal generating circuit.

However, Kanbe differs from the claimed invention in using the driving circuit is not taught to necessarily be a "luminance inclination circuit", which was used in claimed invention, for reducing the luminance unevenness in luminance inclination.

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Nemoto teaches an improved driving circuit for a LCD without inclination of luminance from the upper part to the lower part (see Summary of the Invention, Col. 4 line 20-24). Although Nemoto did not disclose such circuit to be "luminance inclination circuit", it essentially provides the same function.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Nemoto's circuit that will essentially improve luminance unevenness into an afterimage erasing device of Kanbe, because this not only improves image quality while LCD is in display mode, and also prevents deterioration of liquid crystal cells caused by the luminance unevenness.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuk C. Chow whose telephone number is 571 270-1544. The examiner can normally be reached on 8-6 M-TH E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571 270-1550. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YCC



AMARE MENGISTU  
SUPERVISORY PATENT EXAMINER